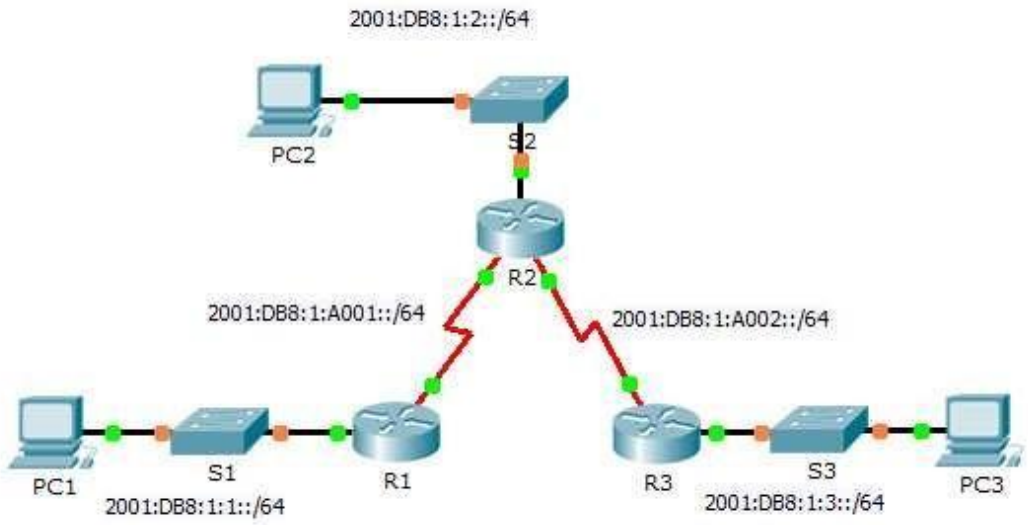
Packet Tracer - Configuring IPv6 Static and Default Routes



IPv6 Addressing Table

Device	Interface	IPv6 Address/Prefix	Default Gateway
R1	G0/0	2001:DB8:1:1::1/64	N/A
	S0/0/0	2001:DB8:1:A001::1/64	N/A
R2	G0/0	2001:DB8:1:2::1/64	N/A
	S0/0/0	2001:DB8:1:A001::2/64	N/A
	S0/0/1	2001:DB8:1:A002::1/64	N/A
R3	G0/0	2001:DB8:1:3::1/64	N/A
	S0/0/1	2001:DB8:1:A002::2/64	N/A
PC1	NIC	2001:DB8:1:1::F/64	FE80::1
PC2	NIC	2001:DB8:1:2::F/64	FE80::2
PC3	NIC	2001:DB8:1:3::F/64	FE80::3

Objectives

Part 1: Examine the Network and Evaluate the Need for Static Routing

Part 2: Configure IPv6 Static and Default Routes

Part 3: Verify Connectivity

Background

In this activity, you will configure IPv6 static and default routes. A static route is a route that is entered manually by the network administrator in order to create a route that is reliable and safe. There are four

different static routes used in this activity: a recursive static route; a directly attached static route; a fully specified static route; and a default route.

Part 1: Examine the Network and Evaluate the Need for Static Routing

a. Looking at the topology diagram, how many networks are there in total?

5

b. How many networks are directly connected to R1, R2, and R3?

R1: 2

R2: 3

R3: 2

How many static routes are required by each router to reach networks that are not directly connected?

R1: 3
R2: 2
R3:3

c. Which command is used to configure IPv6 static routes?

ip route ipv6 network-address subnet-mask {ip-address | exit intf}

Part 2: Configure IPv6 Static and Default Routes

Step 1: Enable IPv6 routing on all routers.

Before configuring static routes, we must configure the router to forward IPv6 packets

Which command accomplishes this?

ipv6 unicast-routing

Enter this command on each router.

Step 2: Configure recursive static routes on R1.

Configure an IPv6 recursive static route to every network not directly connected to R1.

Step 3: Configure a directly attached and a fully specified static route on R2.

a. Configure a directly attached static route from R2 to the R1 LAN.

b. Configure a fully specific route from R2 to the R3 LAN.
Note: Packet Tracer v6.0.1 only checks for directly attached and recursive static routes. Your instructor may ask to review your configuration of a fully specified IPv6 static route.

Step 4: Configure a default route on R3.

Configure a recursive default route on R3 to reach all networks not directly connected.

Step 5: Verify static route configurations.

a. Which command is used in Packet Tracer to verify the IPv6 configuration of a PC from the command prompt?

ipv6config

b. Which command displays the IPv6 addresses configured on a router's interface?

show ipv6 interface brief

c. Which command displays the contents of the IPv6 routing table?

show ipv6 route

Part 3: Verify Network Connectivity

Every device should now be able to ping every other device. If not, review your static and default route configurations.

Suggested Scoring Rubric

Activity Section	Question Location	Possible Points	Earned Points
Part 1: Exam the Network and Evaluate the Need for Static Routing	a - d	20	
	Part 1 Total	**20**	
Part 2: Configure IPv6 Static and Default Routes	Step 1	5	
	Step 5	15	
	Part 2 Total	**20**	
	Packet Tracer Score	**60**	
	Total Score	**100**	